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EXAMINER	
SALTARELLI, DOMINIC D	

ART UNIT	PAPER NUMBER
2611	7

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No. 09/473,871	Applicant(s) KAUFFMAN ET AL.
	Examiner Dominic D Saltarelli	Art Unit 2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 28 December 1999 .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-37 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) 23 is/are allowed.

6)☒ Claim(s) 1-18,20-22 and 24-37 is/are rejected.

7)☒ Claim(s) 19 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 28 December 1999 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Priority

1. Examiner acknowledges that the effective filing date to claims 1, 2, 10, 12, 24, and 27 is November 30, 1994 (benefit to related application 08/347,573). All other claims have a filing date of December 28, 1999.

Oath/Declaration

2. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because all the applications to which applicants claim benefit under 35 USC 120 are not listed. Application number 08/709,456 and 09/074,851 are missing.

Specification

3. The disclosure is objected to because of the following informalities:

Reference to patent application number 08/074,851 should be 09/074,851.

Page 11, lines 25-26 refer to Figure 4A, not 3A.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 30 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Claim 30 identifies a downstream directional coupler for directing the downstream signal contained in the return path frequency band to the control unit, but the specification contains no instances of a coupler with this behavior, nor any indication that downstream signals are in the return path frequency band, nor any reason as to why downstream signals would be in the return path frequency band. The closest match in the disclosure for meeting claim 30 is directional coupler (210), which is not described as directing downstream signals contained in the return path frequency band to the control unit, only that it couples the drop cable (221) to a cable modem port within the communications gateway, suggesting purpose of the coupler is to allow the communications gateway to communicate through the drop cable without interference from the in-home signals that are also being routed through said gateway.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 2, 10, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Curry et al. (3,750,022).

Regarding claim 1, Curry et al. disclose a method of controlling return path ingress comprising the steps of detecting the presence of return path ingress in the return frequency band (Figure 1, item 25, col. 3, lines 34-37), and mitigating the return path ingress substantially near the subscriber location (col. 6, lines 52-58).

Regarding claim 2, Curry et al. disclose the method of claim 1, and additionally disclose the detecting step occurs at the head-end (Figure 1, item 25).

Regarding claim 10, Curry et al. disclose the method of claim 1, and additionally disclose the mitigating step is accomplished by attenuating the return path signal (Figure 3, 128, col. 6, lines 63-68)

Regarding claim 12, Curry et al. disclose the method of claim 1, and additionally disclose the mitigating step is accomplished by isolating the return path signal (col. 7, lines 9-12).

8. Claim 24 is rejected under 35 U.S.C. 102(b) as being anticipated by Ohue (4,928,272).

Regarding claim 24, Ohue discloses a communications gateway (110) for use in a two-way cable environment (col. 3, lines 4-8) wherein the communications gateway is capable of reducing return path ingress (col. 4, lines 6-24), the communications gateway comprising: a network side cable connection (150) for receiving the return path signal (col. 3, lines 31-36), a subscriber side cable connection (120) for receiving the return path signal (col. 3, lines 26-30), an attenuating element (111) for reducing power in the return path signal which is subsequently coupled to the network side cable connection (col. 4, lines 1-5), and a control unit (112) for enabling the attenuating element (col. 4, lines 6-15).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being as being unpatentable over Curry et al. in view of Sanders et al. (5,737,461).

Regarding claim 3, Curry et al. disclose the method of claim 1, but fail to disclose the detecting step can occur substantially near the subscriber location.

Sanders et al. disclose detecting of ingress can occur substantially near the subscriber location [local measurement] (col. 6, lines 64-66), allowing each local unit to monitor its own ingress.

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by Curry et al. to detect ingress substantially near the subscriber location as taught by Sanders et al. for the advantage of allowing each local unit to monitor its own ingress.

Regarding claims 4 and 5, Curry et al. disclose the method of claim 1, but fail to disclose the detecting step utilizes ingress measurements extending across the return frequency band or in a sub-band.

Sanders et al. disclose the detection of ingress utilizes ingress measurements extending across the return frequency band [the full range] or in a sub-band [particular range which is an element of the full range] (col. 6, lines 50-53) allowing for selective detection of ingress within the return frequency band.

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by Curry et al. to detect ingress by utilizing ingress measurements extending across the return frequency band or in a sub-band, as taught by Sanders et al. The reason for doing so would be to allow for selective detection of ingress within the return frequency band.

11. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Curry et al. in view of Naegeli et al. (6,574,797).

Regarding claims 6 and 7, Curry et al. disclose the method of claim 1, but fail to specifically disclose the detecting step takes place in an active or inactive sub-band.

Naegeli et al. disclose that it is common practice to detect both active and inactive sub-bands for the presence of return path ingress in a return frequency band (col. 5, lines 3-12) in order to determine if a currently in use channel is too noisy and to find a cleaner unused channel.

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by Sanders et al. to adjust the particular range of frequencies which identify a sub-band to define an active or an inactive sub-band so that the detecting step takes place in an active or inactive sub-band of the return frequency band as taught by Naegeli et al. The reason for doing so would be to determine if a currently in use sub-band is too noisy and to find a cleaner unused sub-band.

Regarding claim 8, Curry et al. disclose the method of claim 1, but fail to disclose the detecting step further comprises the steps of measuring the average return path signal power in the return frequency band, comparing the average return path signal power to a detection threshold, and determining the presence of ingress in the return frequency band based on the result of the comparison.

Naegeli et al. disclose measuring an average return path signal power in a return frequency band (col. 10, lines 24-34), comparing the average return path

signal power to a detection threshold (col. 10, lines 35-41), and determining the presence of ingress in the return frequency band based on the result of the comparison (col. 10, lines 41-45) in order to determine the amount of ingress present in a particular frequency band.

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by Sanders et al. to have the detecting step comprise measuring the average return path signal power in the return frequency band, comparing the average return path signal power to a detection threshold, and determining the presence of ingress in the return frequency band based on the result of the comparison as taught by Naegeli et al. The reason for doing so would be to provide a fast and efficient means for detecting ingress in a particular frequency band.

Regarding claim 9, Curry et al. and Naegeli et al. disclose the method of claim 8, which is characterized in that ingress is declared present when the average power exceeds the detection threshold (Curry, col. 3, lines 37-41).

12. Claims 13-18 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanders et al. in view of Naegeli et al.

Regarding claims 13 and 16, Sanders et al. disclose a cable network environment (col. 2, lines 66-67) having a head end (102) (col. 4, lines 22-23) and a subscriber location (col. 4, lines 8-15) with a return path communications

being accomplished in a return frequency band (col. 4, lines 16-25), with a method detecting (col. 6, lines 64-67) and mitigating (col. 6, lines 45-52) return path ingress, the method comprising the steps of detecting ingress in a sub-band of the return path (col. 6, lines 50-53), and mitigating the return path ingress at a location near the subscriber location (col. 6, lines 45-48).

What Sanders et al. fail to disclose is retrieving information on channel usage to distinguish active from in-active sub-bands, and subsequently detecting the presence of ingress on either the active or in-active sub-bands.

Naegeli et al. disclose a head end that divides the upstream channel into portions [sub-bands] (col. 4, lines 48-57) and communicates to client devices which portions these devices are to use for upstream communication [active sub-bands] (col. 6, lines 9-11) [thus all other portions are inactive sub-bands], thus making information on channel usage available from the head-end. Naegeli et al. further disclose discriminatory detection of ingress in an active sub-band (Figure 5, items 502 and 504) to determine if an active sub-band is too noisy. Naegeli et al. further disclose that it is well known in the prior art to detect ingress in inactive sub-bands (col. 5, lines 3-12) in order to locate "clean" sub-bands.

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by Sanders to retrieve information on channel usage to distinguish active sub-bands from inactive sub-bands, and to detect the presence of ingress on each, as taught by Naegeli et al. The reason for doing so is so that the detecting step can discriminate between active and in-active sub-

bands and detect the presence of ingress on each in a discriminatory manner to determine when active sub-bands are too noisy and to locate unused, clean sub-bands.

Regarding claims 14 and 17, Sanders et al. and Naegeli et al. disclose the cable network environment of claims 13 and 16 which is characterized in that the information on channel usage is retrieved from the head end (Naegeli et al. col. 5 line 65 - col. 6 line 11).

Regarding claims 15 and 18, Sanders et al. and Naegeli et al. disclose the methods of claim 13 and 16, but fail to disclose the detecting step for determining channel usage is performed substantially near the subscriber location.

Naegeli et al. disclose an alternative embodiment for channel detection where the components which perform the channel usage identification, including the detector (208), can operate outside the head end (col. 9, lines 26-30), lowering the overhead involved with channel detection experienced by the head end. The only system requirement is that the cable modem termination system at the head end and the detector receive the same signal (col. 9, lines 33-37).

It would have been obvious at the time to a person of ordinary skill in the art to alternatively modify the modified method disclosed by Sanders et al. and Naegeli et al. to detect channel usage automatically at a location substantially near the subscriber location (outside the head end) as taught by Naegeli et al.

The reason for doing so would be to lower the overhead involved with channel detection experienced by the head end.

Regarding claims 20 and 21, Sanders et al. and Naegeli et al. disclose the method of claim 16, and additionally disclose the active band is in use by both an in-home device and a communications gateway (Naegeli et al. cable modem (120), both an in-home device and a communications gateway).

Regarding claim 22, Sanders et al. disclose a cable network environment (col. 2, lines 66-67) having a head end (102) (col. 4, lines 22-23) and a subscriber location (col. 4, lines 8-15) with a return path communications being accomplished in a return frequency band (col. 4, lines 16-25), with a method of preventing in-home-signals (214, 216, 218) (col. 4, lines 4-8) from entering an active sub-band of the return path at a location near the subscriber location by monitoring an in-home signal present in the active sub-band (col. 7, lines 6-10) and isolating the in-home signal (col. 7, lines 32-37) when the in-home signal is above a predetermined threshold (col. 7, lines 15-22). The monitoring and isolating of in-home signals is done in a discriminatory manner (col. 7 line 63 – col. 8 line 4).

Sanders et al. fail to disclose the method comprises the step of determining the active sub-band wherein the active sub-band is in use by a device located near the subscriber location.

Naegeli et al. disclose a head end that divides the upstream channel into portions (col. 4, lines 48-57) and communicates to client devices which portions these devices are to use for upstream communication (col. 6, lines 9-11) so that each device restricts itself to transmitting up the return path according to their allotted frequency channels.

It would have been obvious at the time to a person of ordinary skill in the art to modify the method of Sanders et al. to include the step of determining the active sub-band wherein the active sub-band is in use by a device location located near the subscriber location as taught by Naegeli et al., for the advantage of making information on channel usage available from the head-end in order to provide means for discriminatory monitoring and isolating of in-home signals.

13. Claim 11 rejected under 35 U.S.C. 103(a) as being unpatentable over Curry et al. in view of Stoneback et al. (5,835,844).

Regarding claim 11, Curry et al. disclose the method of claim 10, but fail to disclose the attenuation to be based on a power-level equalization algorithm.

Stoneback et al. disclose attenuating a return path signal based on a power-level equalization algorithm. The return path (col. 5, lines 4-7) from different subscribers has different levels of loss associated with it (col. 5, lines 27-35) and thus an equalization algorithm is used to calculate (col. 5, lines 38-41) the amount of attenuation (col. 5, lines 46-53) that needs to be applied to the return path signal in order to maintain constant signal levels (col. 5, lines 41-42).

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by Sanders et al. to perform the attenuation based on a power-level equalization algorithm as taught by Stoneback et al. The reason for doing so is to maintain a constant signal level from each subscriber location.

14. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohue in view of Baran et al. (6,094,211).

Regarding claim 25, Ohue discloses the communications gateway of claim 24, but fails to disclose the attenuating element is a switch.

Ohue does teach blocking entire frequency bands entirely when not in use (col. 4, lines 16-24)

Baran et al. disclose a TV and data cable system ingress noise blocker which is comprised of a switch (46), which is the attenuating device that blocks ingress [upstream noise] (col. 7, lines 20-40) entirely when the channel is not in use.

It would have been obvious at the time to a person of ordinary skill in the art to modify the communications gateway disclosed by Ohue so that the attenuating element a switch as taught by Baran et al. The reason for doing so would be to block ingress noise entirely when the channel is not in use.

15. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohue in view of Sanders et al.

Regarding claim 26, Ohue discloses the communication gateway of claim 24, but fails to disclose the attenuating element is a notch filter.

Ohue does teach the selective passing and filtering of individual frequency bands.

Sanders et al. disclose the attenuating element for reducing ingress in a two way cable TV system can be a notch filter (340) (col. 4, lines 60-63) in order to isolate upstream ingress noise within a particular frequency band originating from a particular subscriber unit (col. 3, lines 1-5 and col. 5 ,line 53).

It would have been obvious at the time to a person of ordinary skill in the art to modify the communications gateway of Ohue to make the attenuating element a notch filter as taught by Sanders et al. The reason for doing so is to isolate upstream ingress noise within a particular frequency band originating from a particular subscriber unit.

16. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohue in view of Curry et al.

Regarding claim 27, Ohue discloses the communications gateway of claim 24, but fails to disclose the attenuating element is an active amplifier.

Curry et al. disclose attenuating upstream signals using active amplifiers (col. 7, lines 24-31) in order to control the power level of each individual upstream signal.

It would have been obvious at the time to a person of ordinary skill in the art to modify the communications gateway of Ohue so that the attenuating element is an active amplifier, as taught by Curry et al. The reason for doing so is so that the power level of each individual upstream signal can be modified.

17. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohue in view of Stoneback et al.

Regarding claims 28, Ohue describes the communications gateway of claim 24, but fails to disclose the control unit runs a power-level equalization algorithm to control the attenuation value of the attenuating element.

Stoneback et al. disclose attenuating a return path signal based on a power-level equalization algorithm. The return path (col. 5, lines 4-7) from different subscribers has different levels of loss associated with it (col. 5, lines 27-35) and thus an equalization algorithm is used to calculate (col. 5, lines 38-41) the amount of attenuation (col. 5, lines 46-53) that needs to be applied to the return path signal.

It would have been obvious at the time to a person of ordinary skill in the art to modify the communications gateway disclosed by Ohue for the control unit to run a power-level equalization algorithm to control attenuation of the

attenuating element as taught by Stoneback et al. The reason for doing so is to maintain a constant signal level from each subscriber location.

18. Claims 29, 32, 33, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanders et al. in view of Farhan et al. (6,567,987).

Regarding claims 29, and 35, Sanders et al. disclose a communications gateway (210) (col. 4, lines 4-12) for use in a two-way cable environment and capable of reducing return path ingress (col. 4, lines 64-66 and col. 8, lines 6-9). Sanders et al. also teach detection of ingress using a predetermined threshold (col. 7, lines 20-22) and the step of locally activating the attenuating element (Sanders et al. in col. 7, lines 42-44).

Sanders et al. fail to specifically disclose the communications gateway to comprise a network side cable connection for transmitting a return path signal onto a cable network, a subscriber side cable connection for receiving the return path signal, a radio frequency module connected to the network side cable connection and to the subscriber side cable connection, a radio frequency module connected to the network side cable connection and to the subscriber side cable connection, wherein the RF module further comprises a tap for separating a portion of the power from the return path signal received though the subscriber side cable connection and an attenuating element for reducing the power in the return path signal which is subsequently coupled to the network side cable connection, and a control unit for enabling the attenuating element.

Farhan et al. disclose a transmitter (200) comprising a network side cable connection for transmitting a return path signal onto a cable network (204), a subscriber side cable connection for receiving the return path signal (202), a tap (230) for separating a portion of the power from the return path signal received though the subscriber side cable connection, attenuating element (250) (col. 3, lines 42-46) for reducing the power in the return path signal which is subsequently coupled to the network side cable connection, and a control unit (234, 236, 238) for enabling the attenuating element.

Additionally, Farhan et al. discloses the control unit to comprise an acquisition stage (234) coupled to the tap and receiving a return path monitoring signal created by the tap (col. 3, lines 23-25), a power estimation circuit (236) for measuring power in the return path monitoring signal (col. 3 lines 25-27), and a decision circuit (238) for adjusting the amplifier (col. 3, lines 28-29). This configuration is used in order to apply gain or loss to the signal when such signal modification is necessary.

It would have been obvious at the time to a person of ordinary skill in the art to modify the communications gateway disclosed by Sanders et al. to be capable of reducing return path ingress by including a network side cable connection for transmitting a return path signal onto a cable network, a subscriber side cable connection for receiving the return path signal, a radio frequency module connected to the network side cable connection and to the subscriber side cable connection wherein the RF module further comprises a tap

for separating a portion of the power from the return path signal received though the subscriber side cable connection the attenuating element for reducing power in the return path signal to be coupled to the network side cable connection and to the subscriber side cable connection, and including a control element comprising an acquisition stage coupled to the tap and receiving a return path monitoring signal created by the tap, a power estimation circuit for measuring power in the return path monitoring signal, and a decision circuit for determining if the return path monitoring signal exceeds a predetermined threshold, for enabling the attenuating element in the manner taught by Farhan et al. The reason for doing so would be provide an automatic, local means for signal attenuation in the upstream when such attenuation is necessary.

Regarding claim 32, Sanders et al. and Farhan et al. disclose the communication gateway of claim 29, and additionally disclose the attenuating element is can be a notch filter according to Sanders et al. (340) (col. 4, lines 60-63). It would have been obvious at the time to a person of ordinary skill in the art to further modify the communications gateway of Sanders et al. and Farhan et al. to make the attenuating element a notch filter as taught by Sanders et al. for the advantage of isolating upstream ingress noise originating from a particular subscriber unit.

Regarding claim 33, Sanders et al. and Farhan et al. disclose the communications gateway of claims 29, and additionally disclose the attenuating element can be an active amplifier according to Farhan et al. (250) (col. 3, lines 32-33) in order to variably control the power level of the output signal (Farhan et al. col. 3, lines 25-40).

It would have been obvious at the time to a person of ordinary skill in the art to further modify the communications gateway of Sanders et al. and Farhan et al. to make the attenuating element active amplifier as taught by Farhan et al. for the advantage of variably controlling the power level of the output signal.

19. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sanders et al. and Farhan et al. as applied to claim 29 above, and further in view of Zelenz (3,716,806).

Given the purpose of the directional coupler specified in the disclosure, the examiner assumes the limitation of claim 30 discloses a directional coupler which allows the control unit or a device within the control unit to directly communicate with the network side cable connection without interference from the subscriber side cable connection.

The modified communications gateway of Sanders et al. and Farhan et al. discloses the communications gateway of claim 29, but fails to disclose the Radio Frequency module to further comprise a downstream directional coupler which

allows the control unit or a device within the control unit to directly communicate with the network side cable.

Zelenz discloses a signal coupling apparatus which allows a device to be directionally coupled to a source of signals traveling in one direction without interference from signals traveling in the opposite direction (col. 5, lines 13-37).

It would have been obvious at the time to a person of ordinary skill in the art to further modify the communications gateway to simply add a downstream directional coupler as taught by Zelenz. The reason for doing so is to allow the control unit to communicate with the network side cable connection without interference from the subscriber side cable connection.

20. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sanders et al. and Farhan et al. as applied to claim 29 above, and further in view of Stoneback et al.

Regarding claim 34, Sanders et al. and Farhan et al. describe the communications gateway of claim 29, but fail to disclose the control unit runs a power-level equalization algorithm to control the attenuation value of the attenuating element.

Stoneback et al. disclose attenuating a return path signal based on a power-level equalization algorithm. The return path (col. 5, lines 4-7) from different subscribers has different levels of loss associated with it (col. 5, lines 27-35) and thus an equalization algorithm is used to calculate (col. 5, lines 38-41)

the amount of attenuation (col. 5, lines 46-53) that needs to be applied to the return path signal.

It would have been obvious at the time to a person of ordinary skill in the art to further modify the communications gateway disclosed by Sanders et al. and Farhan et al. to perform the attenuation based on a power-level equalization algorithm run by the control unit, as taught by Stoneback et al , for the advantage of maintaining a constant signal level from each subscriber location.

21. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sanders et al. and Farhan et al. as applied to claims 24 and 29 above, and further in view of Baran et al.

Regarding claim 31, Sanders et al. and Farhan et al. disclose the communications gateway of claim 29, but fail to disclose the attenuating element is a switch.

Baran et al. disclose a TV and data cable system ingress noise blocker which is comprised of a switch (46), which is the attenuating device that blocks ingress [upstream noise] (col. 7, lines 20-40) entirely when the channel is not in use.

It would have been obvious at the time to a person of ordinary skill in the art to futher modify the communications gateway disclosed by Sanders et al. and Farhan et al. to make the attenuating element a switch as taught by Baran et al.

The reason for doing so would be to block ingress noise entirely when the channel is not in use.

22. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sanders et al. and Farhan et al. as applied to claim 29 above, and further in view of Naegeli et al.

Regarding claim 36, Sanders et al. and Farhan et al. disclose the communications gateway of claim 29. Additionally, Farhan et al. discloses an acquisition stage (234) coupled to the tap and receiving a return path monitoring signal created by the tap (col. 3, lines 23-25), and a decision circuit (238) for determining if the return path monitoring signal exceeds a predetermined threshold (col. 3, lines 28-29). The detection using a predetermined threshold is specifically taught by Sanders et al. in col. 7, lines 20-22.

The modified communications gateway of Sanders et al. and Farhan et al. fails to disclose an analog to digital conversion circuit for digitizing the return path monitoring signal and a digital signal processing unit for determining the return path monitoring signal power.

Naegeli et al. discloses an analog to digital conversion circuit (212) for digitizing the return path monitoring signal and a digital signal processing unit for determining the return path monitoring signal power (col. 9, lines 56-64). Naegeli et al. additionally disclose these components need not be located in the head end (col. 9, lines 28-31). Using digital equipment is faster than analog devices.

It would have been obvious to alternatively modify the communications gateway of Sanders et al. and Farhan et al. to include an analog to digital conversion circuit for digitizing the return path monitoring signal and a digital signal processing unit for determining the return path monitoring signal power as taught by Naegeli. The reason for doing so would be to implement the determination of return path signal power in the faster digital form than in a strictly analog environment.

23. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sanders et al. and Farhan et al. as applied to claim 29 above, and further in view of Naegeli et al.

Regarding claim 37, Sanders et al. and Farhan et al. disclose the communications gateway of claim 29. Additionally, Farhan et al. discloses an acquisition stage (234) coupled to the tap and receiving a return path monitoring signal created by the tap (col. 3, lines 23-25), a power estimation circuit (236) for measuring power in the return path monitoring signal (col. 3 lines 25-27), and a decision circuit (238) for determining if the return path monitoring signal exceeds a predetermined threshold (col. 3, lines 28-29). The detection using a predetermined threshold is taught by Sanders et al. in col. 7, lines 20-22.

Sanders et al. and Farhan et al. fail to disclose a filtering stage for receiving a sub-band of a return path frequency spectrum and creating a filtered return path monitoring signal to be examined by the power estimation circuit.

Naegeli et al. discloses a means for determining the amount of noise within a return path frequency sub-band which comprises a receiver (210) that allows only a frequency channel of interest to be routed to the power determining circuitry (col. 9, lines 39-41), and which need not be located in the head end (col. 9, lines 28-31).

It would have been obvious to modify the communications gateway of Sanders et al. and Farhan et al. to include a filtering stage for receiving a sub-band of a return path frequency spectrum and creating a filtered return path monitoring signal to be examined by the power estimation circuit as taught by Naegeli et al. The reason for doing so is so that only a frequency channel of interest is routed to the power determining circuitry.

Allowable Subject Matter

24. Claim 19 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

25. Claim 23 is allowable because the prior art fails to disclose or suggest detecting channel usage of an in-home device at a location near the subscriber location using spectrum measurements and comparisons.

Ritter (3,619,783) describes a similar process, but where channel determination takes place at the head-end, and the comparisons made are of individual frequencies.

Conclusion

1. The following are suggested formats for either a Certificate of Mailing or Certificate of Transmission under 37 CFR 1.8(a). The certification may be included with all correspondence concerning this application or proceeding to establish a date of mailing or transmission under 37 CFR 1.8(a). Proper use of this procedure will result in such communication being considered as timely if the established date is within the required period for reply. The Certificate should be signed by the individual actually depositing or transmitting the correspondence or by an individual who, upon information and belief, expects the correspondence to be mailed or transmitted in the normal course of business by another no later than the date indicated.

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Please refer to 37 CFR 1.6(d) and 1.8(a)(2) for filing limitations concerning facsimile transmissions and mailing, respectively.

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dominic D Saltarelli whose telephone number is (703) 305-8660. The examiner can normally be reached on M-F 10-7.

If attempts to reach the examiner by telephone are unsuccessful, the primary examiner, Christopher Grant can be reached on (703) 305-4755. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

Dominic Saltarelli
Patent Examiner
Art Unit 2611

DS

Chris Grant
CHRIS GRANT
PRIMARY EXAMINER